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EXAMINER
MITCHELL, KATHERINE W

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/682,142	Applicant(s) SIVAVEC ET AL.
	Examiner Katherine W Mitchell	Art Unit 3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35 and 44-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35 and 44-66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1--35, and 44-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over EPA's "Field Applications of In Situ Remediation Technologies: Permeable Reactive Barriers", April 1999, hereafter the PRB papers, in view of Misquitta US Patent 5639380.

Re claims 1 and 44: The PRB papers teach a method comprising conducting a PRB treatment of a contaminated aqueous medium and in-well monitoring effectiveness of the PRB treatment in the Introduction pages 1-2 and pages 5, 7, 13, 20, 34, 36, 37. Multiple other teachings are throughout also. Examiner notes that the PRB papers in page 36 paragraph 1 and page 74 paragraph 2 for example, teach that dedicated in-situ flow sensors and ground water monitoring wells are installed to track performance. Misquitta teaches in-well monitoring and wireless transmission to a remote collector or monitor in Figs 5 and 10 and col 6 lines 47-60 and col 8 lines 21-40 referring to Fig 8. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the PRB papers to include in-well monitoring and

wireless transmission as taught by Misquitta in order to obtain accurate and dynamic readings of groundwater parameters with a minimum of on-site manpower.

Re claims 15-16: The PRB papers teach monitoring based on both pH and Eh (oxidation-reduction potential) in page 13 paragraph 3. Pages 19-20 teach a site in South Carolina where both pH and eH were monitored to determine effectiveness of remediation.

Re claim 17: Reactive material (zero valent iron) in the barrier zone is taught by the PRB papers page 5, 4th paragraph and in general on page 2 paragraphs 2-3.

Re claims 18-19: the PRB papers teach forming the PRB by digging a trench and placing reactive material within the trench and conducting PRB treatment within the trench, with the trench in the path of the contaminated plume on page 2 paragraph 4.

Re claims 45-46: Misquitta teaches a monitor in col 6 lines 47-60 and the abstract. Absent any criticality, the location of the monitor outside the PRB would be an obvious design choice, and be particularly likely if the PRB contained hazardous or damaging chemicals. Note that Misquitta states the obvious, in col 5 line 64 – col 6 line 6, that the test setup can be inside or outside the contaminated area based on site conditions. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the PRB papers to include the location of the monitor outside the PRB as taught by Misquitta in order to allow easy, safe, and remote monitoring of possibly hazardous conditions.

Re claims 2-14, 20-30, and 47-54: the PRB papers teach up-gradient and down-gradient monitoring wells in page 5 paragraph 5 and multiple other occurrences. Page

61 paragraph 6 teaches monitoring wells located along a transect of the PRB zone. Pages 24-25 teach a 6' wide PRB and teaches that the wells placed are along the upgradient face, the center, and the downgradient face, thus within 25 and 6 feet up- and down- gradient of the PRB and including wells within 2 feet of the PRB or within the PRB. A plurality of sensors is taught in page 13, "Results" in that pH and VOC concentrations were measured, and page 37 paragraph 5 teaches water level monitoring, thus at least 2 sensors were used. As discussed above, Misquitta teaches in-well monitoring and wireless transmission to a remote collector or monitor. Monitoring wells have an open screen interval to allow the monitored fluid to flow into the well, as disclosed the PRB papers page 42 paragraph 4 and page 24 bottom paragraph- page 25 top paragraph. Designing the system to meet site requirements is taught in paragraphs 2-4 on page 91 and paragraphs 1-4 on page 20, and would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have located the monitoring wells with in-well sensors in certain locations relative to the contamination, both vertically and horizontally, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Examiner notes that routine experimentation, based on contamination levels and types, site conditions and limitations, soil permeability, and other factors known to influence remediation work, would be routinely required in any remediation or site assessment project, and notes that the PRB papers on page 7 paragraph teach that additional wells are determined based on pilot studies. Adjusting the treatment based on monitoring

data is taught by the PRB papers on page 20 paragraphs 1-4, page 42, pages 93-94, and the bottom paragraph of page 39, and Misquitta in Fig 6. The method is obvious in the system description and usage.

Re claims 31-35 and 55-62: A transmitter, collector to receive a signal from the transmitter and capable of transmitting a signal to a monitor, and a communication link between said collector and monitor and the method of monitoring and transmitting contaminant data is taught in Misquitta in col 6 lines 47-60 and col 7 lines 7-21. Col 8 lines 14-40 teach wireless interconnected {web} communication links using radio communications. Transmission of data implies a remote monitor. Two way communication is taught by Misquitta in col 6 line 61- col 7 line 1, Fig 6, and col 10 lines 41-46. Outputting a contaminant report is taught by Misquitta in col 7 lines 40-49 and col 10 lines 35-36. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the PRB papers to include a transmitter, a collector to receive a signal from the transmitter and capable of transmitting a signal to a monitor, and a communication link between said collector and monitor as taught by Misquitta in order to automate the monitoring process and obtain "real-time" data and process corrections as elaborated in col 10 lines 41-46 and allow easy, safe, and remote monitoring of possibly hazardous conditions using off-the-shelf and known equipment.

Re claim 63: the PRB papers teach chemical sensors in 1st paragraph on page 20 and page 34. Misquitta teaches chemical sensors in col 7 lines 4-7.

Re claims 64-65: A plurality of sensors in a plurality of wells {a plurality of monitoring wells with sensors} arranged along a substantially longitudinal axis of the PRB zone facing the fluid flow (AA-116,115, and 113) and substantially along a transect to the PRB zone (AA-111,112,113, and 114) is taught in Fig. 1.

Re claim 66: A PRB and a sensor located along a substantially longitudinal axis of the PRB zone facing the fluid flow or substantially along a transect to the PRB zone is taught in the PRB papers on page 61 paragraph 6. As discussed above, Misquitta teaches in-well monitoring and wireless transmission to a remote collector or monitor. Examiner notes it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have located the sensor and well in the specific area where data is best generated, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

3. Claims 1--35, and 44-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US Army Corps of Engineers, DG 1110-345-117, "Design Guidance for Application of Permeable Barriers to Remediate Dissolved Chlorinated Solvents" Proponent: CEMP, Feb 97, 192 pages, hereafter the Corps of Engineers papers, in view of Misquitta US Patent 5639380.

Re claims 44-46: The Corps of Engineers papers teach a method comprising conducting a PRB treatment of a contaminated aqueous medium and in-well monitoring effectiveness of the PRB treatment in Sections 1,7,8, and Appendix A and E. Examiner notes specifically Corps of Engineers papers section 8.2.1 on page 82 and page 81

section 8.1.2 and section 3.3.1 page 26. The Corps of Engineers papers teach all the elements except a remote monitor, in-well sensor, and wireless transmitter. Misquitta teaches in-well monitoring and wireless transmission to a remote collector or monitor in Figs 5 and 10 and col 6 lines 47-60 and col 8 lines 21-40 referring to Fig 8. Absent any criticality, the location of the monitor outside the PRB would be an obvious design choice, and be particularly likely if the PRB contained hazardous or damaging chemicals. Note that Misquitta states the obvious, in col 5 line 64 – col 6 line 6, that the test setup can be inside or outside the contaminated area based on site conditions. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Corps of Engineers papers to include the location of the monitor outside the PRB and remote monitoring of wireless transmissions from in-well sensors as taught by Misquitta in order to allow easy, safe, and remote monitoring of possibly hazardous conditions

Re claim 17: Reactive material (zero valent iron especially) in the barrier zone is taught by the Corps of Engineers papers on pages 28-32.

Re claims 18-19: the Corps of Engineers papers in Executive Summary paragraph 4, page V teach forming the PRB by digging a trench and placing reactive material within the trench and conducting PRB treatment within the trench, with the trench in the path of the contaminated plume.

Re claims 1—14, 20-30 and 47-54: The Corps of Engineers papers teach a method comprising conducting a PRB treatment of a contaminated aqueous medium and in-well monitoring effectiveness of the PRB treatment in Sections 1,7,8, and

Appendix A and E. Examiner notes specifically Corps of Engineers papers section 8.2.1 on page 82 and page 81 section 8.1.2 and section 3.3.1 page 26. The Corps of Engineers papers teach up-gradient and down-gradient monitoring wells in paragraph 3 page 56. Fig. 8.1 teaches monitoring wells located along a transect of the PRB zone. A plurality of sensors is taught in page 26, paragraph 2 and page 81 paragraph 2. Monitoring wells have an open screen interval to allow the monitored fluid to flow into the well, as disclosed the Corps of Engineers papers section 8. Designing the system to meet site requirements is taught in first paragraph page vii and section 1.8 page 9 and paragraph 5 page 48. The Corps of Engineers papers teach all the elements except a remote monitor, in-well sensor, and wireless transmitter. Misquitta teaches in-well monitoring and wireless transmission to a remote collector or monitor in Figs 5 and 10 and col 6 lines 47-60. Examiner notes that routine experimentation, based on contamination levels and types, site conditions and limitations, soil permeability, and other factors known to influence remediation work, would be routinely required in any remediation or site assessment project, and notes that the page 84 paragraph 1 of Corps of Engineers papers teach that additional wells are determined based on pilot studies. Adjusting the treatment based on monitoring data is taught by section 8 and the Executive Summary, and Misquitta in Fig 6. The method is obvious in the system description and usage. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have located the monitoring wells with in-well sensors and wireless transmission to remote monitoring stations, as taught by Misquitta, in order to allow easy, safe, and remote monitoring of possibly hazardous

conditions, and it would be also obvious to locate the wells in certain locations, such as within 2, 6, or 25 feet of the PRB relative to the contamination, both vertically and horizontally, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claims 15-16: The Corps of Engineers papers in page 81 section 8.1.2 and section 3.3.1 page 26 teach monitoring based on pH and Eh (redox potential) and that it is very important to do so.

Re claims 31-35 and 55-62: A transmitter, collector to receive a signal from the transmitter and capable of transmitting a signal to a monitor, and a communication link between said collector and monitor and the method of monitoring and transmitting contaminant data is taught in Misquitta in col 6 lines 47-60 and col 7 lines 7-21. Col 8 lines 14-40 teach wireless interconnected {web} communication links using radio communications. Transmission of data implies a remote monitor. Two way communication is taught by Misquitta in col 6 line 61- col 7 line 1, Fig 6, and col 10 lines 41-46. Outputting a contaminant report is taught by Misquitta in col 7 lines 40-49 and col 10 lines 35-36.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Corps of Engineers papers to include a transmitter, a collector to receive a signal from the transmitter and capable of transmitting a signal to a monitor, and a communication link between said collector and monitor as taught by Misquitta in order to automate the monitoring process and obtain

"real-time" data and process corrections as elaborated in col 10 lines 41-46 and allow easy, safe, and remote monitoring of possibly hazardous conditions using off-the-shelf and known equipment.

Re claim 63: Corps of Engineers papers teach in-well chemical sensors in page 81 section 8.1.2 and section 3.3.1 page 26. Misquitta teaches chemical sensors in col 7 lines 4-7.

Re claims 64-65: A plurality of sensors in a plurality of wells {a plurality of monitoring wells with sensors} arranged along a substantially longitudinal axis of the PRB zone facing the fluid flow and substantially along a transect to the PRB zone is taught in Fig. 8.1, sections 8.1.1 - 8.1.3, pages 76-82 and sections 3.3, 3.3.1, and 3.3.2, pages 26-27 of the Corps of Engineers papers.

Re claim 66: A PRB and a sensor located in a monitoring well located along a substantially longitudinal axis of the PRB zone facing the fluid flow or substantially along a transect to the PRB zone is taught in the Corps of Engineers papers Fig 8.1 and section 8. Misquitta's teaching of in-well sensors has been previously cited. Examiner notes it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have located the sensor and well in the specific area where data is best generated, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

4. Applicant's arguments filed Mar 31, 2003 have been fully considered but they are not persuasive.

5. In response to applicant's argument that Misquitta is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, examiner is using Misquitta, a method and system of monitoring groundwater treatment, for the specifics of the monitoring method. How Misquitta remediated the groundwater is not applied to the applicant's claims or the primary references, and examiner is not combining two treatment methods, but a monitoring system of a groundwater treatment system with a groundwater treatment system. Groundwater treatment monitoring systems would be a logical area to investigate options for groundwater treatment monitoring systems. Applicant stresses that the PRB is a passive system, and that Misquitta teaches the monitoring of a pump and treat system, and examiner agrees this is true. However, the Corps of Engineer paper on page 81 notes that it is important that "traditional methods involving purging...should be avoided, so the Corps of Engineers is aware of the importance of non-disruption. Thus page 26 Table 3-1 of the Corps of Engineering paper shows that pH, Redox Potential, and dissolved oxygen are all monitored and analyzed with in-hole probes {also called downhole probes with multiple sensors and a flowthrough cell shielded by an inert gas

in section 3.3.1 of the same page} – and the notation of no sample volume, no storage container, no sample holding time makes 100% clear that this monitoring is completely in-hole. Similarly, the PRB paper teaches in page 35 that in situ flow sensors are used with ground water monitoring wells. But the Corps of Engineering and PRB papers are silent on transmission of this data, and thus examiner cites Misquitta for the teaching of in-well sensors with wireless signal transmission.

6. Here examiner notes that applicant appears to be interpreting the amended claim language in a manner not supported by the original disclosure. The original disclosure discloses only "in-well sensors" and in fact spells out that the in-well sensors 34/unit 28 are "electronically coupled to the transceiver unit 26", and that the transceiver unit 26 includes the receiver 30 and transmitter 32 capable of transmitting data by hardwired or wireless means:

> ***The monitoring system comprises an in-well unit containing at least one sensor. The unit may include any number of sensors that may be used to monitor groundwater characteristics. The unit is placed down the groundwater monitoring well,*** *typically at the mid-point of the screened interval. Comparison of groundwater data collected within the reactive material and outside the material, both up-gradient and down-gradient can be used to observe changes that the barrier material promotes in the groundwater.* ***The invention can measure important field indicator parameters (sometimes called groundwater quality parameters) without requiring retrieval of formation water by use of a pump.*** *Additionally, the invention provides a method to gain such data in near, real-time and to access such data remotely.*
>
> *FIG. 4 is a schematic representation of a sensing and monitoring system that includes a* ***sensing module 18 or 20*** *that can be used in conjunction with a method and system according to the invention including the embodiments shown in FIG. 1, FIG. 2 and FIG. 3. Referring to FIG. 4,* ***module 18 (or 20) can generate signals (data) corresponding to one or more of the groundwater characteristics at the point of the well location. The module 18 or 20 includes a transceiver unit 26 and an electronically coupled sensing unit***

28. Transceiver unit 26 includes a receiver 30 and a transmitter 32, which is capable of transmitting data to collector 22, which can be a data collection center. The signals can be communicated 106 from transceiver unit 26 by any of a hardwired communication connection such as an electrical conductor; by a wireless communication connection such as by radio signals, by satellite communications or by combinations of wireless and hardwired connections.

Sensing unit 28 can detect a contaminant of interest or a contaminant level of interest in an influent stream. ***The sensing unit 28 can includes sensors 34.*** *Suitable types of sensors 34 include a chemical sensor, acoustic wave sensor, fiber optics sensor, solid-state sensor such as a metal oxide semiconductor (MOS), an electrochemical sensor and combinations of such sensors.*

The unit 28 includes a communications unit, which is electronically coupled to the unit *and is capable of transmitting data to a data collection center. The signals may be communicated, for example, from a well transceiver to the data collection system by at least one hardwired communication connection, such as, but not limited to, an electrical conductor, wireless communication connections, such as, but not limited to, radio signals, satellite communications and combinations of wireless and hardwired connections. The communications unit also typically comprises an antenna that is connected to the transceiver, unless the communications unit is hardwired. The data collection center comprises a center communications unit that is capable of receiving signals from the transceiver and a control that analyzes the signals and generates information on groundwater characteristics. The control of the data collection system typically includes a "user friendly" data acquisition software package that transforms information into easy-to-read formats .*

It appears applicant is now asserting that the "in-well transmitting the signal by wireless communication to a remote collector or monitor" must be 100% wireless from the sensor itself to the transmitter to the data collection center, but applicant never disclosed such information in the originally-filed application, only that data was wirelessly transmitted. Examiner believed, especially after the in-person interview of Feb. 11, 2003 during which examiner summarized that applicant considered the main point of applicant's argument was that Misquitta did not teach "wireless transmitter" {see

interview summary mailed with office action 3/11/2003 which was given in draft to applicant and faxed for approval days after the meeting}. Read in view of the specification and the written summary of the interview, examiner interpreted "in-well transmitting the signal by wireless communication to a remote collector or monitor" to mean transmitting the in-well signal by wireless means rather than interpret that applicant was introducing new matter. Fig 4 also shows wired communications (solid lines) between sensors 34, receiver 30, and transmitter 32 and shows communication (106) which is wireless (dotted lines) only between transmitter 32 and data collector 22. Further absolutely no criticality was provided for wireless transmission. Specifically, the original claims had wireless and hardwired as equal alternatives, as did the original specification, and no criticality is ever provided. Thus it is obviously only the in-well sensor/sensing unit (as opposed to pumped retrieval of samples), not the wireless transmission, which contributes to a passive system.

Applicant had wireless transmission in Misquitta in col 8 lines 14-40 cited on page 9 lines 6-8 of office action mailed 11-5-2002, and on page 7 lines 8-9 of the office action mailed 1/23/2003. Applicant refers to the fact that col 8 lines 41-50 to argue that Misquitta does not teach wireless transmission, and that is true, but Misquitta has at least "preferred, yet another, and a more preferred" embodiments, and the "in yet another embodiment, shown in Fig 8, condition signal 410 from monitoring device 510 is transmitted by wireless means, such as radio waves, to computer controller 540". {col 8 lines 21-23} . Examiner apologizes that cutting and pasting did not relocate direction to

see col 8 lines 14-40, but the reference was cited numerous times as teaching wireless transmission.

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Misquitta specifies that automation is a benefit for remediation projects in col 2 lines 40-42, and examiner notes that costs for labor and manpower are a factor always considered in long-term projects, especially when the site is likely to be remote and hazardous, as contaminated sites usually are, as disclosed in col 8 lines 25-29. In response to applicant's argument that the wireless transmission was for a different reason other than " where terrains or cost mitigates against the use of laying down signal runs", the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Also, as stated above, wireless is not required for passive treatments, as applicant admitted by equating hardwired and wireless in the original application. It is the in-cell sensor which avoids disruption.

8. Applicant request how costs for labor and manpower are related to "wireless", and examiner notes that electricians, ditchdiggers, site surveys, and much more are required to run electrical lines across sites to connect multiple wells' sensors to remote data collectors.

9. Applicant requests what would have led one skilled in the art to combine passive PRB technology to a "wireless" teaching in the "pump and treat" art, and examiner again feels that since applicant equated wireless and hardwired in every example in the original disclosure and provided no criticality in the original disclosure, the question is somewhat moot, but examiner will state again that the problem being solved by "wireless transmission" was that of getting data communicated. Data communication does not disrupt PRBs, since applicant lists hardwired communication as an equivalent choice and acknowledges it is the pumping of samples to obtain the information, not the transmission, which is disruptive. Applicant argues that there is no teaching in Misquitta to apply wireless teachings to other than pump and treat systems, and requests where a teaching appears. Col 8 lines 25-27 state" "This {wireless} embodiment is useful for sites where the terrain or cost mitigates against the use of laying down signal runs", which would apply for both pump and treat and PRB sites.

10. Finally, applicant argues against the assertion, and demands a citation of a reference documenting, that costs for labor and manpower are always considered in long-term projects. Examiner is positive that costs are always considered in long-tem projects, and believes that official notice is more than adequate. However, examiner is

providing the 1997 General Electric (Assignee) Annual Report as documentation that costs are always considered.

11. Examiner notes that costs increase when hazards are involved, as employees receive an extra amount for "hazardous work". This is documented, as *demanded*, in the hazardous duty pay rules for federal employees, "Frequently asked Questions about Hazardous Duty Pay for Federal Employees" posted 6/24/1998, and examiner has personally hired contractors who were paid a hazardous duty differential when working on contaminated sites.

12. Contractors charge for travel time, and remote sites will require more travel time. This is documented, as *demanded*, in both APWU Convention Bulletin No 1, 7/20/1998 which discloses that postal workers get travel time, and "The Farrier & Hoofcare Resource Center", posted 1/28/1998 which clearly states that if you are a long way out, your travel costs when hiring a contractor to come out will increase. Examiner notes it also teaches that time is money, which is true in all fields, including, but not limited to, law, farrier work, and electrical conduit installation, and thus would in all likelihood apply to workers at PRB remediation sites.

13. Also as *demanded,* examiner notes that by definition contaminated sites are considered hazardous, precisely because of hazardous pollutants that make them contaminated:

con·tam·i·nate
con·tam·i·nate (ken-tàm'e-nât´) *verb, transitive*
con·tam·i·nated, **con·tam·i·nat·ing**, **con·tam·i·nates**
1. To make impure or unclean by contact or mixture.
2. To expose to or permeate with radioactivity.
adjective (-nît)

Archaic.
Contaminated.
— **con·tam¹i·na´tive** *adjective*
— **con·tam¹i·na´tor** *noun*
Synonyms: *contaminate, befoul, foul, poison, pollute, taint.* The central meaning shared by these verbs is "to make dirty or impure": *a contaminated reservoir; shoes that were befouled with mud; noxious fumes that foul the air; chemicals poisoning the lake; polluted streams; food that had been tainted through improper storage.*[1]

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine W Mitchell whose telephone number is 703-305-6713. The examiner can normally be reached on Mon-Thurs 9:30 AM - 8:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on 703-306-4115. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-308-8623 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

kwm
April 21, 2003

ROBERT J. SANDY
PRIMARY EXAMINER